

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (Withdrawn) An optical head apparatus, comprising:
a single monolithic semiconductor substrate having at least a first side and a second side; the first side including an air bearing surface;
a laser integral with the first side having an emission facet substantially coplanar with the air bearing surface; and
a contact pad on the second side electrically bridged to the laser.
2. (Withdrawn) The optical head apparatus of claim 1, wherein the contact pad is electrically bridged to the laser by a conductive via extending from the laser around a corner of the substrate along the second side of the substrate connecting to the contact pad.
3. (Withdrawn) The optical head apparatus of claim 1 wherein the laser is defined by one of an oxidized and ion-implanted region.
4. (Withdrawn) The optical head apparatus of claim 1, further comprising a slider portion integral with the semiconductor substrate next to the air bearing surface wherein electrical connection to the contact pad does not interfere with aerodynamic operation of the slider portion.
5. (Withdrawn) The optical head apparatus of claim 4 wherein the contact pad on the second side is recessed with respect to the emission facet and the air bearing surface.

6. (Withdrawn) An apparatus comprising a single semiconductor substrate having a first region and a second region, the first region defining a slider, the slider including an air bearing surface, the second region defining a laser, the laser including a first contact and a second contact.
7. (Withdrawn) The apparatus of claim 6 wherein the first contact is a p-electrical contact and the second contact is an n-electrical contact.
8. (Withdrawn) The apparatus of claim 7 wherein the p-electrical contact is adjacent to a p-clad layer and proximate to an emission face, and an n-electrical contact adjacent to an n-clad layer.
9. (Withdrawn) The apparatus of claim 8 wherein the first and second contacts define a laser diode.
10. (Withdrawn) The apparatus of claim 6 wherein the second region comprises a vertical cavity surface emitting laser, the emitting laser having an emission facet which is substantially co-planar with the air bearing surface.
11. (Withdrawn) The apparatus of claim 10 wherein the second region is defined by an oxidized or ion-implanted region in a p-DBR mirror stack.
12. (Withdrawn) The apparatus of claim 7 wherein the p-electrical contact is recessed with the first and second regions.
13. (Currently Amended) An apparatus comprising a single monolithic device including an aerodynamic slider and at least one laser wherein the laser includes an aperture in an emission facet, the aerodynamic slider being defined as an air

bearing surface adjacent to a p-clad layer, the monolithic device being mounted on a read/write arms via a suspension mechanism, the device being used to read and write on an optical media.

14. (Original) The apparatus of claim 13 wherein a width "w" of the aperture is of smaller dimension than an output wavelength " λ " of the laser.

15. (Original) The apparatus of claim 14 wherein a reflective read/write surface of optical media during a read/write operation is positioned at an optical path-length "l" from the emission facet is less than the output wavelength " λ ".

16. (Original) The apparatus of claim 13 wherein the optical media comprises "phase change" media.

17. (Original) The apparatus of claim 16 wherein the "phase change" media comprises GeTeSb materials.

18. (Original) The apparatus of claim 17 wherein the media comprise a phase change layer positioned between a protective overcoat and a base or substrate.

19. (Original) The apparatus of claim 13 wherein the optical media comprises an outer overcoat of a diamond-like carbon or protective material, a first dielectric layer, a phase change layer, a second dielectric layer, a metal layer, a third dielectric layer, and a base or substrate.

20. (Currently Amended) The apparatus of 19 wherein the dielectric layers comprises comprise ZnS:SiO₂.

21. (New) The apparatus of claim 13 wherein the laser further includes a p-electrical contact.
22. (New) The apparatus of claim 21 wherein the p-electrical contact is recessed with respect to the emission facet.
23. (New) The apparatus of claim 21 wherein the p-electrical contact is adjacent to the p-clad layer.
24. (New) The apparatus of claim 22 wherein the p-electrical contact and the p-clad layer are approximated to the emission facet.
25. (New) The apparatus of claim 13 wherein the emission facet is substantially co-planer with the air bearing surface.